

REMARKS

The present remarks are in response to the Final Office Action dated September 6, 2005, in which the Examiner rejected claims 1-26. The Applicant has amended claims 1, 6, 14-17, 20 and 24-26. Support for amending claims 1, 6, 14-17, 20, and 24-26 can be found in the original claims and throughout the specification, in particular, paragraphs 12, 13, 31, 32, 38, 39, 46, 47 and 51. Claims 5 and 21-23 have been canceled.

The Applicant respectfully responds to the Examiner's Detailed Action and requests the Examiner place all claims detailed in the application in a state of allowance.

A. Rejection of Claims Under 35 USC § 103

The Examiner has rejected claims 1 to 26 as being unpatentable over Chen, U.S. Patent No. 5,970,376 (hereinafter "Chen '376") in view of Pangrle et al. U.S. Patent No. 6,566,283 (hereinafter "Prangle '283") and Wu et al., U.S. Patent No. 6,720,256 (hereinafter "Wu '256") and Hsue et al. U.S. Patent No. 6,696,222 (hereinafter "Hsue '222").

The Examiner contends that it would be obvious for one skilled in the art of integrated circuits to remove a photoresist layer from a OSG (organo silicate glass) layer using N₂O at the time the invention was made.

The Applicants respectfully disagree with many aspects of the Examiner's argument. Chen '376 only mentions N₂O once in the entire specification, col. 11, line 3, where Chen recites a laundry list of possible oxygen-containing gases for

removing a photoresist off of silsesquioxane layer, in which N_2O is mentioned. Chen gives no information on the effectiveness or efficiency of removing a photoresist layer with nitrous oxide from an organosilicate glass layer, or even a silsesquioxane layer for that matter.

At the time the invention was made, those skilled in the art did not believe nitrous oxide to be effective in removing a photoresist layer from an organosilicate glass layer due to integration damage of the OSG layer. Not until the Applicants demonstrated the unexpected results and benefit of utilizing N_2O gas over other oxygen containing gases for stripping photoresists from an OSG layer (TABLE II of the specification), did the use of N_2O become widely accepted by those skilled in the relevant art. Table 2 clearly shows that N_2O photoresist stripping causes the least damage to the OSG layer than other O_2 gases (see % changes in SiC/SiO ratio) which was an **unexpected** result at the time the invention was made. The Examiner has failed to present evidence to the contrary.

However, to expedite the examination of the application, the Applicants have amended independent claims 1, 6, 14 and 20 to recite the limitation that N_2O is utilized to remove an organic plug or second intermediate layer as well as the photoresist layer. None of the cited references singly or in combination suggest or describe the use of N_2O for stripping a photoresist layer and also using N_2O for removing an organic plug. None of the cited references singly or in combination suggest or describe the use of N_2O for stripping a photoresist layer and also using N_2O for removing a second intermediate layer.

Support for the amendments to claims 1, 6, 14 and 20 are found throughout the specification and the original claims. In particular, support for using N₂O for removing a second intermediate layer or an organic plug can be found in paragraphs 12, 13, 31, 32, 38, 39, 46, 47 and 51 of the specification.

Dependent claims 2-4, 7-13, 15-19, and 24-25 also comprise the limitation that N₂O is utilized for photoresist stripping as well as for the removal of an organic plug or second intermediate layer, due to their dependency on either independent claim 1, 6, 14 or 20.

Therefore, Applicants respectfully submit that claims 1-4, 6-20, and 24 - 26, overcome the obviousness rejection, and the Applicants respectfully request these claims be placed in a state of allowance.

B. Conclusion

For all the forgoing reasons, allowance of claims 1-4, 6-20, and 24-26, is respectfully requested.

Respectfully Submitted;

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